

Work Order ID 62610

October 5, 2010 10:40:47 AM



Page 1

Item ID: D212-664-201TRN

Accept



Setup Start



Revision ID:

Item Name: Crosstube Turning Detail

Stop



Start Date: 10/05/10 Start Qty: 1.00



Cust Item ID:

Required Date: 10/15/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: *✓*

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D212-664-241	Rev D

100



MORI SEIKI CNC LATHE LARGE

0.00

*OK 10/10/07**1 0*

Mori Seiki	Memo	0.00	10/10/07	1 0
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Mori Seiki CNC Lathe Large

Memo

- 1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA114
- 2-Turn first side as per Folio FA114
- 3- File transition lines smooth.

110



QC1- Inspect dimensions to dimension sheet

0.00

*OK 10/10/07**1 0*

QC

Memo

Quality Control

120



MORI SEIKI CNC LATHE LARGE

0.00

*OK 10/10/07**1 0*

Mori Seiki	Memo	0.00	10/10/07	1 0
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Mori Seiki CNC Lathe Large

Memo

- 1-Turn second side as per Folio FA114
- 2- File transition lines smooth.
- 3-Remove sand and plugs
- 4- scribe batch # and part # as per dwg

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 62610

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October 5, 2010 10:40:47 AM

Item ID: D212-664-201TRN

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Setup Start



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Item Name: Crosstube Turning Detail

Stop



Start Date: 10/05/10 Start Qty: 1.00



Cust Item ID:

Required Date: 10/15/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



QC

Quality Control

QC1- Inspect dimensions to dimension sheet

0.00

10/10/07

1 0

140



QC

Quality Control

QC8- Inspect parts - second check

0.00

10/10/07

XL

150



HandFXtube

Crosstubes Chemical Conversion

0.00

10/10/13

O

Hand Finishing Crosstubes

Memo

0.00

Chemical Conversion Coat as per within 24 hours of machining

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 62610

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October 5, 2010 10:40:48 AM

Item ID: D212-664-201TRN

Accept



Setup Start



Revision ID:

Item Name: Crosstube Turning Detail

Stop



Start Date: 10/05/10 Start Qty: 1.00



Cust Item ID:

Required Date: 10/15/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date: Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInspec.
Stamp

160



QC

QC3- Inspect Part Finish

0.00

Quality Control

170



Packaging

Packaging

0.00

Packaging

Memo

0.00

Identify and stock in kanban rack
Location: Landing Gear

180



QC

QC21- Final Inspection - Work Order Release

0.00

Quality Control

Memo

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October 5, 2010 10:40:46 AM

Page 1

Work Order ID: 62610



Parent Item: D212-664-201TRN



Parent Item Name: Crosstube Turning Detail

Start Date: 10/05/10

Required Date: 10/15/10

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec
IPP Rev B 08.04.02 Removed polish EC verified DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6006-129		Manufactured	No			120	Each	37.0000	1	1			

Crosstube Material



Location	Loc Qty	Loc Code
LG	37	
23970	2	
26550	14	
34690	11	
38338	10	

10/05/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD

Work Order: 62610

Description: Crosstube Assembly (205/212 High Aft)

Part Number:

D212-664-241

Inspection Dwg: D212-664-241 Rev: D

Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.200	+/-0.010	.208	—	Vern	ML-7
	R0.063	+/-0.010	R.063	—	Red-gage	REF
	2.990	+0.005/-0.000	2.995	—	Micr	ML-03
	5.237	+/-0.030	5.237	—	Vern	ML-7
	2.600	+0.005/-0.000	2.604	—	Vern	ML-7
	2.686	+0.005/-0.000	2.691	—	Micr	ML-03
	2.770	+0.005/-0.000	2.775	—	“	“
	2.854	+0.005/-0.000	2.859	—	“	“
	2.938	+0.005/-0.000	2.942	—	“	“
	3.021	+0.005/-0.000	3.026	—	Micr	CNC-05
	3.133	+0.005/-0.000	3.137	—	Micr	CNC-05
	3.179	+0.005/-0.000	3.183	—	“	“
SIDE B	0.200	+/-0.010	.208	—	Vern	ML-7
	R0.063	+/-0.010	R.063	—	Red-gage	REF
	2.990	+0.005/-0.000	2.990	—	Micr	ML-03
	5.237	+/-0.030	5.230	—	Vern	ML-7
	2.600	+0.005/-0.000	2.601	—	Vern	ML-7
	2.686	+0.005/-0.000	2.690	—	Micr	ML-03
	2.770	+0.005/-0.000	2.771	—	Micr	ML-03
	2.854	+0.005/-0.000	2.855	—	Micr	ML-03
	2.938	+0.005/-0.000	2.939	—	Micr	ML-03
	3.021	+0.005/-0.000	3.026	—	Micr	CNC-05
	3.133	+0.005/-0.000	3.138	—	Micr	CNC-05
	3.179	+0.005/-0.000	3.183	—	Micr	CNC-05
	124.362	+/-0.020	124.360	—	M-tape	ML-2

Measured by: *Amf*
Date: 10/10/07

Audited by: *S*
Date: 10/10/07

Preliminary Approval: N/A
Date: N/A

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	
B	06.03.09	Tolerance for 5.237 was +/-0.001	KJ/JLM	
C	07.05.08	Dwg Rev. updated	KJ/JLM	<i>M</i>
D	10.08.03	Dimension 124.362 was 124.36	KJ <i>sk</i>	<i>M</i>

D

D

Item	Qty	Qty	Part Number	Description
	-241	-241B		
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	4	4	MS21920-28	CLAMP (OR MS21920-30)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.362±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF
USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-241 = 44.2 lbs (PER IIN-D212-664)
D212-664-241B = 44.2 lbs (PER IIN-D212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING
IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE
OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS
AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE
SUPPORT.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR
DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND
MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT
HAS NOT BOTTOMED-OUT AFTER TORQUING.

W0 6260

RELEASED
2009-10-29
W

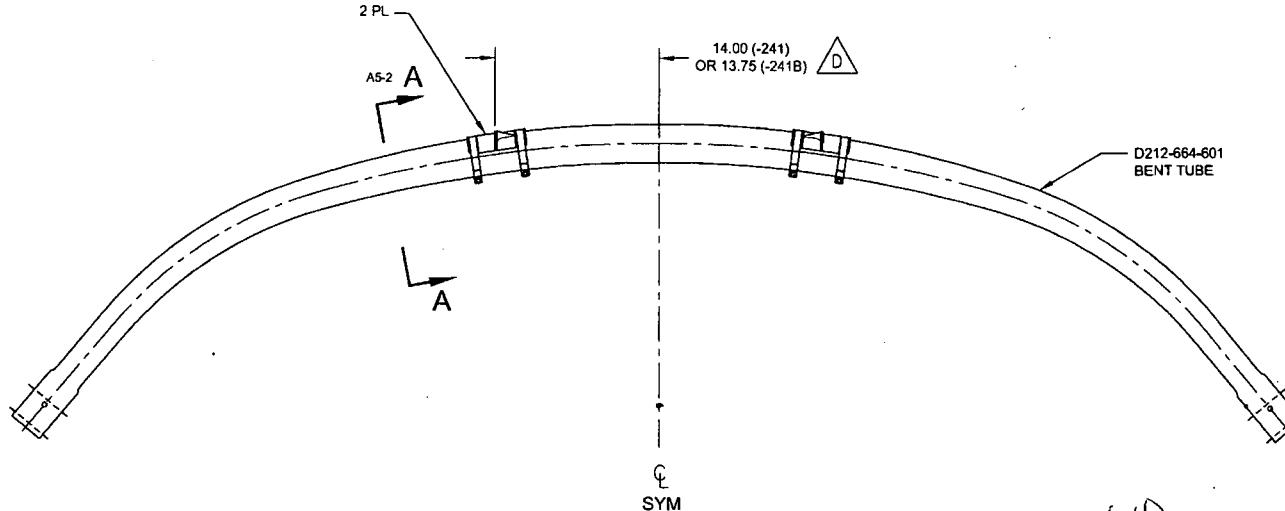
D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN DB-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO. D212-664-241	
CHECKED	PP	REV. D SHEET 1 OF 4	
MFG. APPR.	DS	TITLE CROSSTUBE ASS'Y (205/212 HI AFT) NTS	
APPROVED	PP	DATE 09.09.30	
DE APPR.	PP	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

A

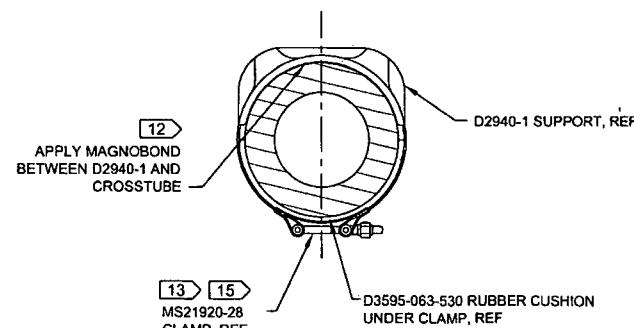
8 7 6 5 4 3 2 1

12 13 15
D2940-1 SUPPORT
MS21920-28 CLAMP, 2X
D3595-063-530 RUBBER CUSHION, 2X

2 PL



D212-664-241/241B
ASSEMBLY DETAIL

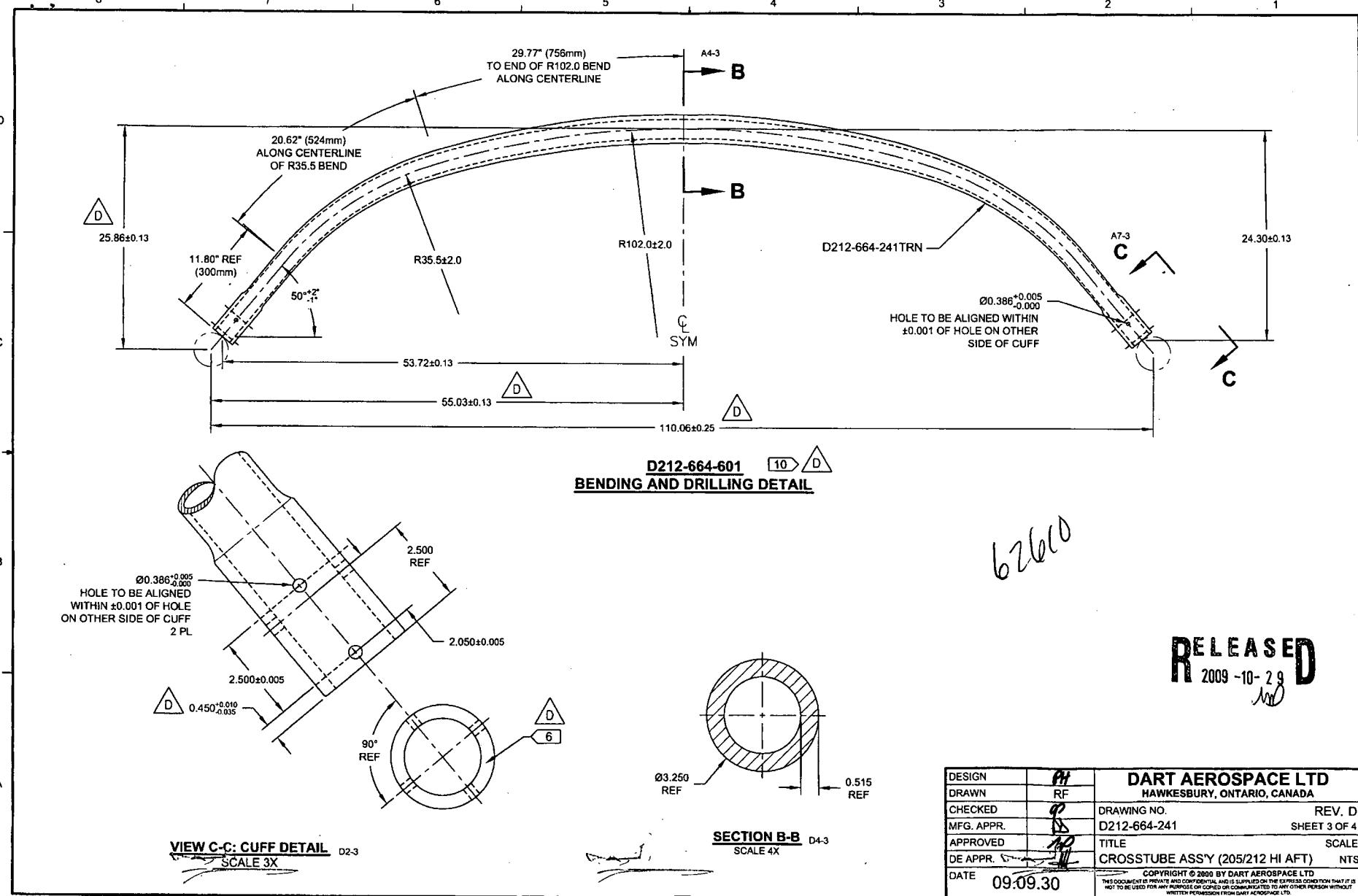


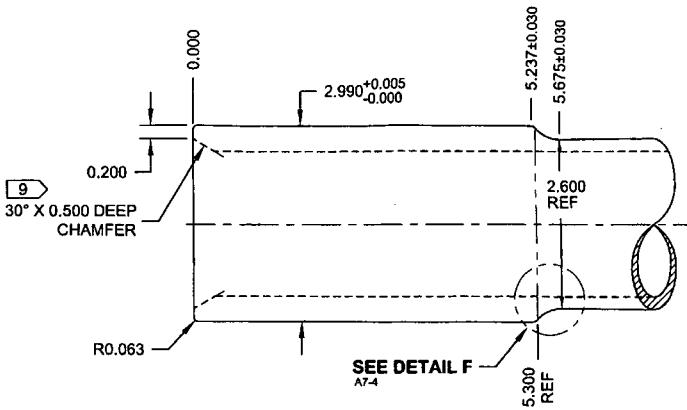
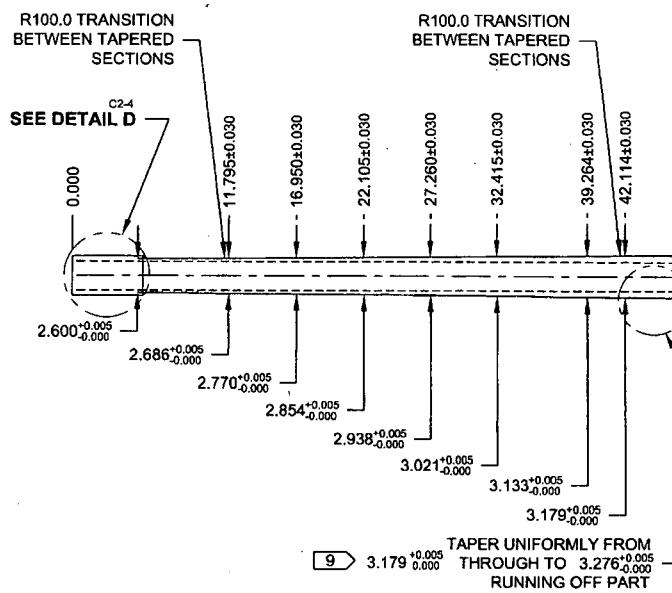
SECTION A-A D6-2
SCALE 4X

DESIGN	PH	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	9	DRAWING NO.
MFG. APPR.	IV	REV. D
APPROVED	10	D212-664-241
DE APPR.	11	SCALE
DATE	09.09.30	CROSSTUBE ASSY (225-242 HI AFT) NTS

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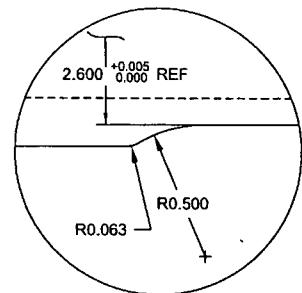
8 7 6 5 4 3 2 1



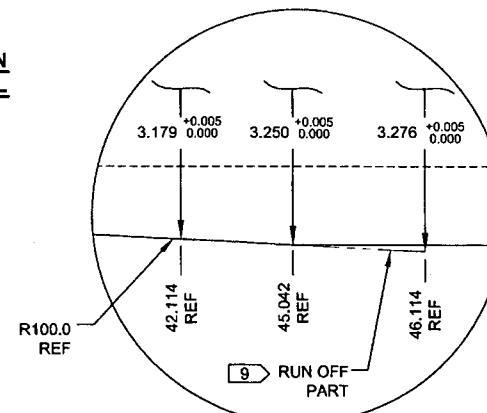


DETAIL D:
CROSSTUBE CUFF D8-4
SCALE 5X

D D212-664-241TRN
TURNING DETAIL



DETAIL F:
CUFF TRANSITION C2-4
SCALE 10X



DETAIL E:
TAPER RUN-OFF C5-4
NOT TO SCALE

6260
RELEASED
2009-10-29
NP

DESIGN	A7	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	9	DRAWING NO.
MFG. APPR.	11	REV. D
APPROVED	10	D212-664-241
DE APPR.	11	SHEET 4 OF 4
DATE	09.09.30	TITLE SCALE CROSSTUBE ASSY (S05/212 HI AFT) NTS

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